

Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-24 (canceled) .

Claim 25 (previously presented): A transmission power control method for controlling the power to transmit to a distant party, comprising the steps of:

controlling an adjustable digital-to-analog converter for generating an analog baseband signal to be input to a modulator for frequency-converting a transmission signal to a signal in an IF band;

controlling first and second variable power amplifiers, connected in series with each other, for variably amplifying the transmission signal modulated by the modulator;

a detection step of detecting a state of at least one of a local station and a distant station; and

a modification step of modifying control ratios of the first and the second variable power amplifiers according to the detected state;

wherein at least one of series and parallel control in a control range is made in the controlling the first and second variable power amplifiers step, and wherein, in the series control, the control ratio of the first variable amplifier is set to 1 and the control ratio of the second variable amplifier is set to 0, and wherein, in the parallel control, a sum of the control ratios of the first and second variable amplifiers is set to 1.

Claim 26 (previously presented): A transmission power control method according to claim 25, wherein a plurality of states of at least one of the local station and the destination station are detected in the detection step, and wherein the control ratios are modified by using fuzzy control rules and fuzzy inference that are based on the plurality of states in the modification step.

Claim 27 (previously presented): A transmission power control method according to claim 25, wherein the control ratios according to the state of at least one of the local station and the distant station is adaptively modified in the modification step.

Claim 28 (previously presented): A transmission power control method according to claim 25, wherein a control sensitivity of each of the first and second variable power amplifiers differs from each other.

Claim 29 (previously presented): A transmission power control method for controlling a power to transmit to a distant party, comprising the steps of:

- controlling first and second voltage controllers;
- controlling, using said first and second voltage controllers, a power amplifier for amplifying a transmission signal;
- the first voltage controller controlling a collector voltage of the power amplifier, the second voltage controller controlling a base voltage of the power amplifier;
- a detection step of detecting a state of at least one of a local station and a distant station; and
- a modification step of modifying control ratios of the first and the second voltage controllers according to the detected state;

wherein at least one of series and parallel control in a control range is made in the voltage controller controlling step, wherein, in the series control, the control ratio of one of the voltage amplifiers controllers is set to 1 and the control ratio of the other is set 0, and wherein, in the parallel control, a sum of the control ratios of the first and second voltage controllers is set to 1.

Claim 30 (previously presented): A transmission power control method according to claim 29, wherein a plurality of states of at least one of the local station and the destination station are detected in the detection step, and wherein the control ratios are modified by using fuzzy control rules and fuzzy inference that are based on the plurality of states in the modification step.

Claim 31 (previously presented): A transmission power control method according to claim 29, wherein the control ratios according to the state of at least one of a local station and a distant station are adaptively modified in the modification step.

Claim 32 (previously presented): A radio communication apparatus comprising:

- a first variable power amplifier;
- a second variable power amplifier connected in series with said first variable power amplifier;
- an adjustable digital-to-analog converter;
- a modulator;
- means for controlling the adjustable digital-to-analog converter for generating an analog baseband signal to be input to the modulator for frequency-converting a transmission signal to a signal in an IF band;

means for controlling first and second variable power amplifiers for variably amplifying the transmission signal modulated by the modulator;

a detection unit for detecting a state of at least one of a local station and a distant station; and

means for modifying control ratios of the first and the second variable power amplifiers according to the detected state,

wherein at least one of series and parallel control in a control range is utilized by the means for controlling the first and second variable power amplifiers, and wherein, in the series control, the control ratio of the first variable amplifier is set to 1 and the control ratio of the second variable amplifier is set to 0, and wherein, in the parallel control, a sum of the control ratios of the first and second variable amplifiers is set to 1.

Claim 33 (previously presented): The apparatus of claim 32, wherein a plurality of states of at least one of the local station and the destination station are detected by the detection unit, and wherein the control ratios are modified by using fuzzy control rules and fuzzy inference that are based on the plurality of states in the means for modifying.

Claim 34 (previously presented): The apparatus of claim 32, wherein the control ratios according to the state of at least one of the local station and the distant station is adaptively modified in the means for modifying.

Claim 35 (previously presented): The apparatus of claim 32, wherein a control sensitivity of each of the first and second variable power amplifiers differs from each other.

Claim 36 (previously presented): A radio communication apparatus comprising:

a first voltage controller;
a second voltage controller;
means for controlling said first and said second voltage controllers;
a power amplifier for amplifying a transmission signal;
means for controlling, using said first and second voltage controllers, said power amplifier, wherein the first voltage controller controls a collector voltage of the power amplifier and the second voltage controller controls a base voltage of the power amplifier;
a detection unit for detecting a state of at least one of a local station and a distant station; and
means for modifying control ratios of the first and the second voltage controllers according to the detected state;
wherein at least one of series and parallel control in a control range is made in the means for controlling said first and said second voltage controllers, wherein, in the series control, the control ratio of one of the voltage controllers is set to 1 and the control ratio of the other is set 0, and wherein, in the parallel control, a sum of the control ratios of the first and second voltage controllers is set to 1.

Claim 37 (previously presented): The apparatus of claim 36, wherein a plurality of states of at least one of the local station and the destination station are detected by the detection unit, and wherein the control ratios are modified by using fuzzy control rules and fuzzy inference that are made based on the plurality of states by the means for modifying.

Claim 38 (previously presented): The apparatus of claim 36, wherein the control ratios according to the state of at

least one of a local station and a distant station are adaptively modified by the means for modifying.

Claims 39-40 (canceled).